

GILA RIVER BASIN

09512100 INDIAN BEND WASH AT SCOTTSDALE, AZ

LOCATION.--Lat 33°32'08", long 111°54'50", in NW¹/₄NE¹/₄ sec.11, T.2 N., R.4 E., Maricopa County, Hydrologic Unit 15060106, on right bank 100 ft downstream from Arizona Canal.

DRAINAGE AREA.--62 mi² approximately, since October 1975. Prior to October 1975, 139 mi²; reduction caused by cutoff of upper portion of basin by Central Arizona Canal and detention dike (also see REMARKS).

PERIOD OF RECORD.--January 1961 to September 30, 1984 (discontinued). Prior to October 1972 published as "near Scottsdale."

REVISED RECORDS.--WRD Ariz., 1972: 1968, 1970 (revised figures of daily discharge for water years 1968 and 1970 were inadvertently omitted from WSP 2126).

GAGE.--Water-stage recorder. Datum of gage is 1,275 ft from topographic map. Prior to July 31, 1981, at site 0.25 mi upstream at different datum.

REMARKS.--Records poor. Natural flow of wash affected by urbanization and partly regulated by artificial lakes upstream. Upper portion of basin (about 77 mi) cut off by Central Arizona Canal and detention dike in October 1975. Release of excess flood waters may occasionally pass canal into lower portion of basin. Records at present site may include water spilled over emergency spillway along north side of Arizona Canal but do not include water released through the control structure on south side of canal, which enters Indian Bend Wash downstream from the gage.

AVERAGE DISCHARGE.--15 years (water years 1962-75), 2.67 ft³/s, 1,930 acre-ft/yr, representing flow from 139 mi²; median of yearly mean discharges, 0.30 ft³/s, 220 acre-ft/yr. 9 years (water years 1976-84), 2.54 ft³/s, 1,840 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--1962-1975: Maximum discharge, 21,000 ft³/s June 22, 1972, gage height, 4.90 ft, at site and datum then in use, from rating curve extended above 7,000 ft³/s on basis of partial discharge measurement at gage height, 4.2 ft and slope-conveyance method at gage height, 4.90 ft; no flow for most of time each year. Flood of June 22, 1972, which originated mainly downstream from the Central Arizona Canal is the largest known since at least 1922.

1976-84: Maximum discharge, 5,000 ft³/s, Sept. 2, 1984, gage height, 4.35 ft at new site and datum currently in use, from rating curve extended above 96 ft³/s.

Annual peak discharges

Water year	Date	Annual peak discharge (ft ³ /s)	Discharge codes	Water year	Date	Annual peak discharge (ft ³ /s)	Discharge codes
1943	08-03-43	¹ 15,000	HP	1972	06-22-72	¹ 21,000	C
1961	09-13-61	745		1973	10-19-72	9,600	C
1962	00-00-62	0		1974	07-31-74	9.4	C
1963	07-19-63	350		1975	11-03-74	20	ES,C
1964	10-19-63	328		1976	09-25-76	3,500	C
1965	02-07-65	76		1977	10-23-76	140	C
1966	09-13-66	596		1978	03-02-78	3,180	C
1967	07-17-67	248		1979	01-17-79	252	C
1968	12-19-67	5,620		1980	02-15-80	125	C
1969	00-00-69	0		1981	07-30-81	450	C
1970	09-05-70	2,150	C	1983	00-00-82	150	C
1971	08-10-71	85	C	1984	08-16-83	3,830	C

¹Highest since 1922.

Discharge rating table developed October 1982

Gage height (ft)	Discharge (ft ³ /s)	Gage height (ft)	Discharge (ft ³ /s)
1.8	110	3.0	1,310
2.0	205	3.2	1,670
2.2	336	3.4	2,100
2.4	509	3.6	2,590
2.6	726	3.8	3,130
2.8	990	4.0	3,740

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Basin characteristics

Main channel slope (ft/mi)	Stream length (mi)	Mean basin elevation (ft)	Forested area (percent)	Soil index	Mean annual precipitation (in)	Rainfall intensity, 24-hour	
						2-year (in)	50-year (in)
60.0	23.3	1,780	0.0	2.4	10.9	1.7	3.7

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MEAN MONTHLY AND ANNUAL DISCHARGES 1961-84							MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1962-84						
MONTH	MAXIMUM (FT3/S)	MINIMUM (FT3/S)	MEAN (FT3/S)	STAN- DARD DEVI- TION (FT3/S)	COEFFI- CIENT OF VARI- ATION	PERCENT OF ANNUAL RUNOFF	PERIOD (CON- SECU- TIVE DAYS)	DISCHARGE, IN FT3/S, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND NON-EXCEEDANCE PROBABILITY, IN PERCENT					
								2 50%	5 20%	10# 10%	20# 5%	50# 2%	100# 1%
OCTOBER	192	0.00	8.2	39	4.8	27.1							
NOVEMBER	7.0	0.00	0.69	1.8	2.7	2.3							
DECEMBER	49	0.00	2.7	9.9	3.7	8.7	1						
JANUARY	4.3	0.00	0.38	1.0	2.7	1.3	3						
FEBRUARY	9.2	0.00	0.92	2.4	2.6	3.0	7						
MARCH	45	0.00	2.9	9.7	3.3	9.6	14						
APRIL	0.26	0.00	0.01	0.05	4.9	0.0	30						
MAY	1.4	0.00	0.10	0.35	3.4	0.3	60						
JUNE	150	0.00	6.3	31	4.9	20.6	90						
JULY	6.1	0.00	0.87	1.8	2.1	2.9	120	0.00	0.00	0.00	0.00	0.00	0.00
AUGUST	24	0.00	1.3	4.9	3.9	4.1	183	0.00	0.00	0.00	0.00	0.00	0.00
SEPTEMBER	71	0.00	6.1	16	2.6	20.0							
ANNUAL	17	0.00	2.5	4.2	1.7	100							

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1943, 1961-70							MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1961-84						
DISCHARGE, IN FT3/S, FOR INDICATED RECURRENCE INTERVAL IN YEARS, AND EXCEEDANCE PROBABILITY, IN PERCENT							PERIOD (CON- SECU- TIVE DAYS)	DISCHARGE, IN FT3/S, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND EXCEEDANCE PROBABILITY, IN PERCENT					
2 50%	5 20%	10 10%	25 4%	50 2%	100 1%			2 50%	5 20%	10# 10%	25# 4%	50# 2%	100# 1%
							1	100	618	1,490	3,560	6,170	10,100
							3	44	262	610	1,390	2,320	3,650
							7	21	121	275	605	982	1,500
							15	11	65	150	335	549	843
							30	5.5	34	78	176	290	448
							60	3.1	18	42	95	156	243
							90	2.1	13	29	64	106	164
378	1,440	2,950	6,400	10,600	16,800								
WEIGHTED SKEW (LOGS)=	0.10												
MEAN (LOGS)=	2.59												
STANDARD DEV. (LOGS)=	0.68												

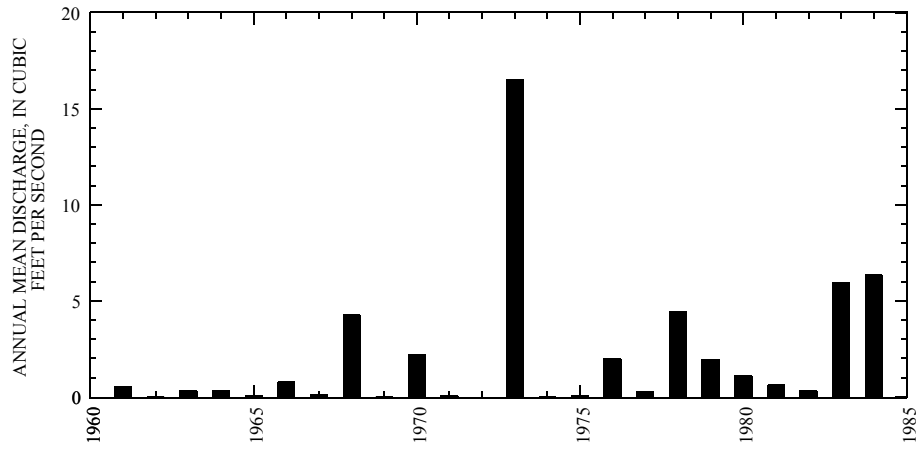
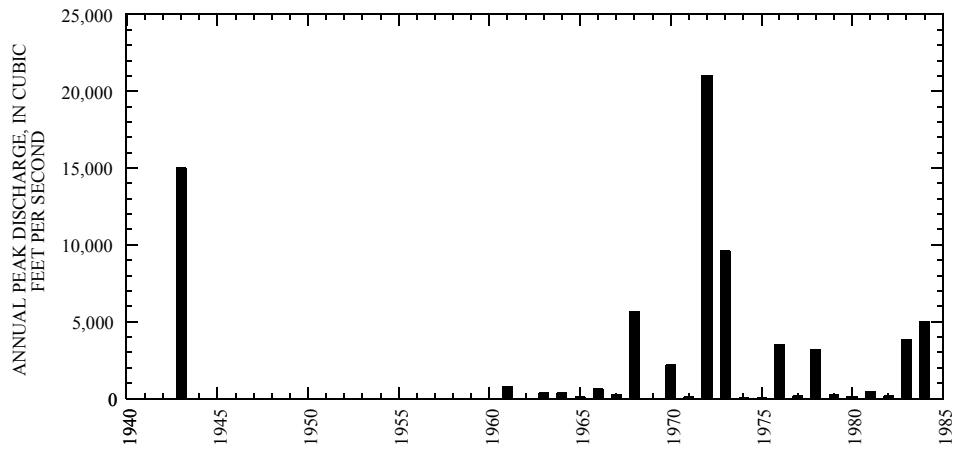
DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1961-84

DISCHARGE, IN FT3/S, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																	
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Reliability of values in column is uncertain, and potential errors are large.

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